

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD**

CONSERVATION COVER

(Ac.)

CODE 327

DEFINITION

Establishing and maintaining permanent vegetative cover

PURPOSE

This practice may be applied to accomplish one or more of the following:

- Reduce soil erosion and sedimentation.
- Improve water quality.
- Improve air quality
- Enhance wildlife habitat.
- Improve soil quality
- Manage plant pests

CONDITION WHERE PRACTICE APPLIES

This practice applies on all lands needing permanent vegetative cover. This practice does not apply to plantings for forage production or to critical area plantings.

CRITERA

General Criteria Applicable to All Purposes

Species shall be adapted to soil, ecological sites, and climatic conditions and shall be suitable for the planned purpose and site conditions.

Seeding rates and methods shall be adequate to accomplish the planned purpose. Certified or Source Identified seed shall be used. Certified and source identified seed is defined by the Iowa Crop Improvement Association. See www.agron.iastate.edu/ICIA for more information.

Planting dates, planting methods and care in handling and planting of the seed or planting stock shall maximize that planted materials have an acceptable rate of survival. Vegetative planting material (e.g. sprigs, rhizomes, bulbs) shall be from a reliable supplier.

Establishment of Permanent Vegetative Cover.

Seeding Periods.

The dates listed in Table 1 of the specifications outlined in the Conservation Cover 327 IA Job Sheet are based on long-term averages and may be extended by two weeks on either end by the district conservationist with concurrence by the area resource conservationist. Extension of these planting dates shall be based on both favorable moisture and temperature for proper seed germination. Extension beyond this two-week window must be approved by the State Agronomist.

Fertilizer and Lime Requirements.

Introduced Grasses.

Recommendations will be based on pastureland according to ISU-Extension publication PM-1688 "General Guide for Crop Nutrient Recommendations in Iowa" for Conservation Cover establishment. In cases where soil test results indicate that less than 25 pounds per acre of total fertilizer and/or less than 2000 pounds of total liming material is required, the fertilizer requirement may be waived at the discretion of the district conservationist. When soil test results are not available, a general fertilizer recommendation of 0-30-40 as established by ISU for CRP

seedings in 1986 will be used for sites located on upland soils (Hydrologic zone E). Fertilizer will not be used when establishing seeding in Hydrologic zones B, C, or D including floodplain filter strips as outlined in Technical Note #27, Guidance on Seeding For Pothole, Floodplain, and Other Wetlands. This decision and reason is to be documented on the NRCS-CPA-4, Seeding Plan.

Native Grasses.

For native grasses and forb establishment no N, P, K or lime is required.

Companion Crop.

Introduced Species.

For spring seedings and dormant seedings, oats shall be seeded at a rate of one bushel/acre to reduce soil erosion and help control weed competition. The oats shall be clipped 4-6 inches high at the time of seed head emergence to promote growth of the new permanent cover. The use of the companion crop is not required when interseeding and is optional for all other seeding periods.

Native Species.

Companion crops are generally not recommended for native seedings except where low residue and high erosion potential exist. The district conservationist may require a broadcast or drilled companion crop of oats at the rate of one bushel/acre. The oats will be clipped or chemically killed at the time of seed head emergence to promote growth of the new permanent cover.

Seedbed Preparation and Seeding.

Site preparation shall be sufficiently adequate to prepare a favorable seed bed and eliminate weed competition to enhance the establishment and growth of selected species. See specification for site preparation outlined in the Conservation Cover 327 IA Job Sheet.

Seed Quality.

All seed shall comply with Iowa Seed and Weed Laws including Iowa Crop Improvement Association Guidance at

www.agron.iastate.edu/ICIA and Iowa Noxious Weed Law.

Cool season (introduced) grass and legume seeding rates are expressed in bulk pounds/acre. Seed quality shall not drop below 70% Pure Live Seed (PLS) where $PLS = (\% \text{ germination} + \text{dormant seed}) \times \% \text{ purity}$.

Native grass species seeding rates are expressed in PLS pounds/acre. Either the germination test or Tetrazolium (TZ) test is acceptable for determining PLS for native species.

Approved Plant Species and Seeding Rates.

1. Select combinations of plant species, or cultivars best adapted to site conditions including moisture regime and landscape preference and meet the intended purpose.
 - a. Use specifications outlined in the Conservation Cover 327 IA Job Sheet or IA Native Seeding Calculator for approved plants species and seeding rates.
 - b. Refer to Agronomy Technical Note 28, "Guidance for Seeding Natives on Prairie Reconstruction Sites" for more information on native cultivar selection.
2. The seeding rate for frost seeding is $1 \frac{1}{2}$ times the normal seeding rate shown in Tables 2 in the specification in conservation Cover 327 IA Job Sheet or 60 seeds/sq ft for native species. Native species suitable for frost seeding are debarbed or smooth coated seed unless it is cultipacted immediately after frost seeding.
3. Introduced Species.
 - a. To calculate seeding mixtures for introduced species, multiply desired mixture percentage by the per acre bulk seed rate in Table 2 of the specifications outlined in the Conservation Cover 327 IA Job Sheet.

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- b. Approved introduced plant species, allowable mixture composition, and the pure stand seeding rate are shown in Table 2 of the specifications outlined in the Conservation Cover 327 IA Job Sheet.
 - c. A designed seeding mixture shall meet criteria specified in Table 2 in the specifications outlined in the Conservation Cover 327 IA Job Sheet as to species composition and seeding rate.
 - d. Mixtures may include up to 20 percent native grasses. Use the criteria for the predominant species in the mixture for stand establishment.
4. Native Species.
- a. Calculate percentages by seed count for native species. See Iowa Native Seeding Calculator.
 - b. Use the Iowa Native Seeding calculator to determine approved native plant species, mixture composition, and a pure stand seeding rate for native grasses, forbs and woody plants.
 - c. A designed seeding mixture shall meet criteria as outlined in the Iowa Native Seeding Calculator. For wildlife mixtures not more than 4 seeds/sq ft of the mixture will be composed of switchgrass or 8 seeds/sq ft of the mix composed of Canada wildrye. Some programs may be more restrictive.
 - d. When developing seeding mixtures, except eastern gamma grass, use a minimum of 40 seeds/sq. ft. . Grass and forbs/legume mixtures, use 20 to 30 seeds/sq. ft. for the grass component and a minimum of 10 to 20 seeds/sq. ft. for the forbs/legume component. Seeding mixes composed of 20 seeds/sq ft of grass and 20 seeds/sq ft of forbs-legumes may only be used on slopes of 5% or less or any slope if the native seeding mix is no-tilled into killed sod.
 - e. For calculating eastern gamma grass, use 2 seeds/sq ft for pure grass stands.
 - f. When using a grass/forb mixture, do not use all tall growth forms of grass species but rather use a mixture of tall, medium, and short species. This will allow for more light penetration to promote the forb component.
 - g. Mixtures may include up to five percent introduced legumes. Use the criteria for the predominant species in the mixture for stand establishment.
 - h. Annual and biannual forbs/legumes are to be limited to no more than 20 percent by # of seeds/sq ft of the forb/legume component.
 - i. Long-term prairie reconstruction (greater than 15 years) is restricted to local ecotype or local source identified seed. Refer to Technical Note 28, "Guidance for Seeding Natives on Prairie Reconstruction Sites."
 - j. Native seedings should be limited to local ecotypes or source identified (seed harvested from remnant site) when planting within one mile of an existing native prairie remnant.

Weed Control During the Establishment Period.

Weed control during the establishment period shall be provided to ensure survival of the new permanent seeding.

Mechanical, biological or chemical control may be used to control undesirable vegetation.

For mechanical control, sites may be mowed just above the height of the seedling plants or no closer than eight inches for native species and no closer than four inches for introduced species. Mow early before the weeds have a

chance to smother out the native seedlings and about every two weeks throughout the first growing season to keep competition from shading young plants.

Approved herbicides may be used on both introduced cool season and native plantings to control weed species.

Establishment of Temporary Cover.

Temporary cover may be required to reduce potential weed and erosion problems where one of the following conditions exists.

- Fields with herbicide carry over.
- Where planting is delayed due to unavailability of seed.
- The normal planting period has passed.

The temporary cover shall be seeded as specified in Table 3 the Conservation Cover 327 IA Job Sheet.

Additional Criteria to Reduce Soil Erosion and Sedimentation

The amount of plant biomass and cover needed to reduce wind and water erosion to the planned soil loss objective shall be determined using the current approved wind and/or water erosion prediction technology.

Additional Criteria for Enhancing Wildlife Habitat

Grasses, forbs, shrubs and/or legumes shall be planted in a diverse mix to promote bio-diversity and meet the needs of the targeted species of wildlife.

Tall Fescue shall not compose more than ten percent of the mixture if primary or secondary purpose is for wildlife.

When developing seeding plans for wildlife purposes, restorations or reconstructions of pothole, floodplain, and other wetland ecosystems consider the soils, moisture regimes, and topography of the site to develop seeding mixtures to meet the site characteristics. See Agronomy Technical Note 27 "Seeding Guidance For Pothole, Riverine, and other Wetland Related Long-term Easements."

Any mowing after seeding establishment (except for noxious weed control) will be done after August 1 to protect nesting wildlife.

Annual mowing, haying, grazing or burning of entire field will not be permitted.

Additional Criteria to Improve Soil Quality

Plants will be selected on the basis of producing high volumes of organic material to maintain or improve soil organic matter. The amount of biomass needed will be determined using the current soil condition index procedure found in the Revised Universal Soil Loss Equation version 2.

Additional Criteria to Manage Plant Pests

In organic systems and perennial crop systems such as orchards, vineyards, berries and nursery stock, permanent vegetative cover shall be established and managed according to Land Grant University Integrated Pest Management (IPM) recommendations for the target pest species.

CONSIDERATIONS

Consider landowner needs, specific program objectives and target wildlife species when planning vegetation.

Restoring permanent wildlife habitat to establish native multi-species grasses and forbs mixtures over introduced mixtures should be encouraged. Monocultures are discouraged.

Native plant species may benefit from periodic burning. Burning can stimulate growth by reducing unwanted competition from weedy or woody plants and removing excessive plant residue. Refer to Prescribed Burning, Practice Code 338, for recommendations.

Cooperators using herbicides to control weed competition should be cautioned as follows:

Read and follow all label directions and heed all precautions. Cooperators should be aware of and adhere to the provisions of local, county, state, or federal laws and regulations concerning the use of agricultural chemicals.

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Refer to Pest Management, Practice Code 595, for additional information on pesticide use and safety.

For frost or dormant seeding on land susceptible to erosion and where less than 30 percent residue cover is present on the surface of the soil, consider erosion control practices such as contour planting, mulching, and cover crops to reduce erosion.

Wildlife benefit from blooming plants throughout the growing season. When designing a seeding mixture for wildlife benefits, consider selection of forbs/legumes that provide for full season flowering.

For visual aesthetics consider selection of forbs/legumes that provide color and flowering periods to meet the landowner's objectives.

On sites that have inclusions of very thin soils with little vegetative growth, such as severely eroded areas and infertile overwash, consider taking a soil test and following critical area seeding to address the plant resource needs.

If the establishment of cover is intended to promote the forb component, consider decreasing the grass component to 20 seeds per sq. ft., increase the forb component to at least 20 seeds per sq. ft., and increase the seeding rate of short and intermediate grass species and reduce the seeding rate to ≤ 4 seed per sq. ft of large, aggressive grasses (Indiangrass, switchgrass, big bluestem) to reduce competition and shading of forbs.

PLANS AND SPECIFICATIONS

Specifications for this practice shall be prepared for each site.

Some programs may be more restrictive than this standard. If so follow program guidelines for vegetative establishment and maintenance.

Plans shall include, but are not limited to:

- recommended species,
- seeding rates and dates,
- establishment procedures,

- other management actions needed to insure and adequate stand.

A job sheet, printout of Native Seeding Calculator and/or similar document shall be used to provide specifications for conservation cover to the landuser.

When formal stand evaluation is needed, use Agronomy Technical Notice #19, October 1997, "Guideline for Herbaceous Stand Evaluation."

OPERATION AND MAINTENANCE

Mow, burn, clip, or use approved herbicides to reduce competition from existing stand to improve survival of desired species during the establishment period.

After the establishment period, spot mowing, burn, or spot herbicide treatment shall be used to control noxious weeds and other undesirable plant growth.

If plant vigor declines in introduced species, maintenance levels of plant nutrients may be applied.

Where plant vigor declines in native plant species or where invader species threaten native mix stands, burning may be appropriate.

Where conservation cover is grazed or hayed, refer to Prescribed Grazing, Practice Code 528, and Forage Harvest Management, Practice Code 511, for recommendations.

REFERENCES

These publications are available at County Extension Offices; Extension Distribution Center, Printing Building, Iowa State University, Ames, IA 50011; and several are available on the ISU Publications Home page at <http://www.extension.iastate.edu/Pages/pubs/>.

- ISU PM-1688 "General Guide for Crop Nutrient Recommendations in Iowa."
- ISU PM-869 "Fertilizing Pasture."

The following publications are available at the Iowa NRCS Home page at:
<http://www.ia.nrcs.usda.gov>.

- Native Grass Seeding Calculator.
- Agronomy Technical Note 19 “Guideline for Herbaceous Stand Evaluation.”
- Agronomy Technical Note 27 “Guidance on Seeding Pothole, Floodplain, and Other Wetland”.
- Agronomy Technical Note 28 “Guidance for Seeding Natives on Prairie Reconstruction Sites”.
- NRCS Standard Prescribed Burning, Practice Code 338.
- NRCS Standard Forage Harvest Management, Practice Code 511.
- NRCS Standard Prescribed Grazing, Practice Code 528.
- NRCS Standard Nutrient Management, Practice Code 590.
- NRCS Standard Early Successional Habitat Management, Practice Code 647.
- NRCS Standard Pest Management, Practice Code 595.